A

phosphorylation → *elimination* →

Dha: R = H
Dhb: R = CH$_3$

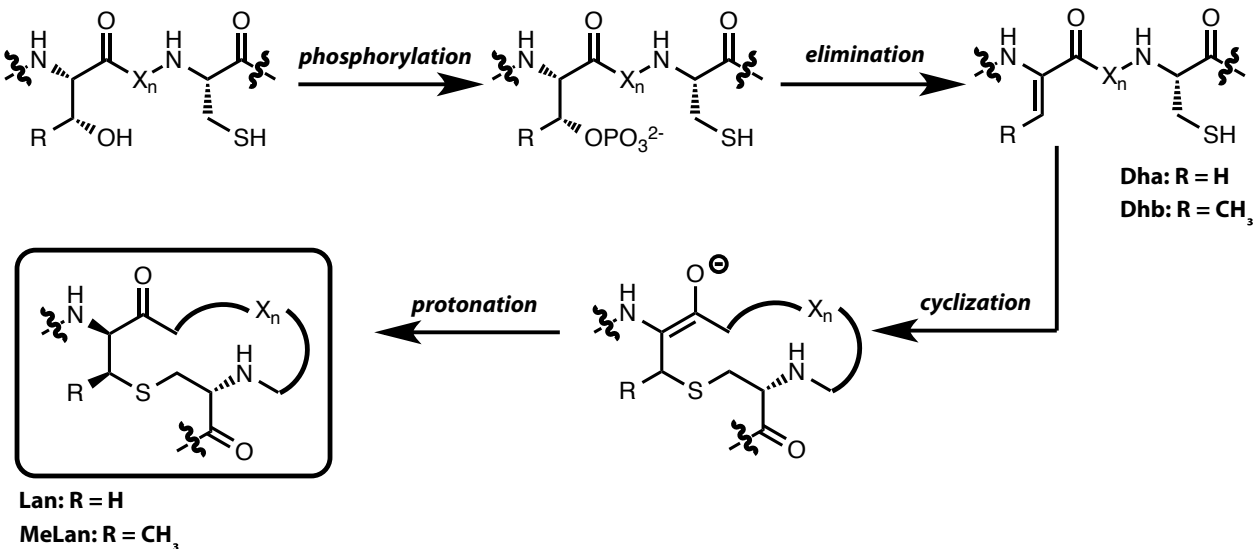*protonation* ← *cyclization* ←

Lan: R = H
MeLan: R = CH$_3$

B

Class I

LanB dehydratase **LanC** cyclase

Class II

LanM dehydratase domain cyclase domain

Class III

LanKC lyase domain kinase domain putative cyclase domain

Class IV

LanL lyase domain kinase domain cyclase domain